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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,624	02/10/2004	Azeemullah Khan	MSFT-2949/307005.01	1533

41505 7590 05/28/2008

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CIRA CENTRE, 12TH FLOOR

2929 ARCH STREET

PHILADELPHIA, PA 19104-2891

EXAMINER

WANG, RONGFA PHILIP

ART UNIT

PAPER NUMBER

2191

MAIL DATE

DELIVERY MODE

05/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/775,624

Applicant(s)

KHAN ET AL.

Examiner

PHILIP WANG

Art Unit

2191

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 8-13, 16-21, and 24-33 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 14, 15, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to RCE filed on 2/25/2008.
2. Claims 1, 11, 19, 27, and 32 have been amended.
3. Claims 1, and 5-33 remain pending.

Allowable Subject Matter

4. Claims 6, 7, 14, 15, 22 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 35 U.S.C. 101, and objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim Objections

5. Claims 22 and 23 are objected to because of the following informalities: Claim 22 depends on itself and claim 23 depends on claim 22. Appropriate correction is required.
6. Claims 6, 7, 14, 15, 22 and 23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and clear of any rejections or objections in this office action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1, 5-10, 19-26, and 32-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1 and 5-10 recite the limitation of software architecture. The software architecture comprises a server, a client and a debugger. The server, client, and debugger, without specific inclusion of a piece of hardware, can be interpreted as pure software modules. Therefore, such limitation can be interpreted as software. Software is not a statutory patentable subject matter. Claims 19-26, and 32-33 recite the limitation of a computer-readable medium. According to Applicant's specification, page 7, 2nd paragraph, a computer readable media can be communication media, and communication media can be modulated signal, which is signal. Therefore, a computer readable media can be signal per se. Signal is considered a form of energy and is not considered as a statutory patentable subject matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 11-18, 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 19 recite the limitation of "said detection" in "halting execution of the client connection on the server process responsive to said connection;" There is insufficient antecedent basis for this limitation in the claim. Dependent claims 12-18, and 20-26 suffer the same deficiency.

Art Unit: 2191

Claims 27 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claims 27 and 32 recite the steps of returning, calling, halting, and enabling. It appears the Applicant attempts to claim the invention as disclosed in Figure 5, or specification, pages 15-16, for example. There are apparently some steps missing. For example, steps 501, 507, and 511. The examiner suggests referring the claim 19 for a more complete scope of claim language. Further, the Applicant appears to claim client, server and debugger in three separate computers. The examiner would suggest considering identifying which computer (or process) takes what action (or in response, thereof). Dependent claims of claims 27 and 32 are rejected for the same reason.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 5, 8-13, 16-21, and 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Azzawe (USPTN 7,155,426) in view of Meier et al. (USPTN 6,058,393) and further in view of Alpern (USPTN 7, 107, 578).

Per claim 1,

Art Unit: 2191

Al-Azzawe discloses

a server, wherein the server runs the distributed database application on a computer(Fig. 1, 2, c2: 51-56, "...debugging of SQL instructions located in a sever...");

a client, wherein the client interacts with the distributed database application by way of the client connection(Fig. 1, 2, c2:51-65,);

a debugger, wherein the debugger debugs the distributed database application process(Fig. 1, 2, c2:51-65,), wherein the server, and client, each run on separate computers (Fig. 1, shows client and server run on separate machine); and

an application program interface (API), wherein the API receives a debugger request from the debugger to debug code, causes the server to call a debugging component, and wherein the debugger debugs the managed code (c5:52-c6:10, "... through a debugger interface software...debugger interface is thus a set of C API...").

Al-Azzawe does not specifically disclose

Debugger is on a separate machine from the application (client and server, where client and server are separated as previously shown).

However, Meier et al. disclose

Debugger is on a separate machine from the application (and therefore, client, server and debugger are separated) (c4: 19-25, "...initiating debugging in an distributed environment where the debugger may be running on a different machine...different from the application program is running on..." , and Fig. 2).

Art Unit: 2191

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Meier et al. into the teachings of Al-Azzawe to include the limitation discloses by Meier et al. . The modification would be obvious to one of ordinary skill in the art to want to be able to debug external programs as suggested by Meier et al. (c3: 44-47, "...there is no practical method for debugging external program...").

Al-Azzawe/ Meier et al. do not specifically disclose debugging managed code.

However, Alpern discloses

debugging managed code (FIG. 1 shows a debugger capable of debugging virtual machine. The debugged virtual machine can be a JVM, see c8: 49-65, "...JVM...include JAVA classfiles of JAVA bytecode..." SUN's JVM runs bytecode, which is equivalent to Microsoft's CLI. See Specification, page 2, 1st para., where managed code is defined as code running in CLI.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Alpern into the teachings of Al-Azzawe/ Meier et al. to include the limitation discloses by Alpern. The modification would be obvious to one of ordinary skill in the art to want to debug managed code on a virtual machine (see Alpern, c1: 41- 44, "The advantage of virtual machine...").

As per claim 5, the rejection of claim 1 is incorporated,

Al-Azzawe discloses

Art Unit: 2191

wherein the API receives a debugger request to debug managed code, causes the server to call a remote debugging component, and wherein the debugger debugs the managed code by way of the remote debugging component (c6:5-9, see API calls).

As per claim 8, the rejection of claim 1 is incorporated,

Al-Azzawe discloses

comprises a user interface, wherein the user interface displays only the T-SQL activity within the server on the client connection being debugged(c12: 36-54, "...debugger manager user interface...display the debugging session..."; c4: 10: "...TSQL..." where when debugging TSQL, only TSQL activity is being debugged).

As per claim 9, the rejection of claim 1 is incorporated,

Al-Azzawe discloses

comprises a user interface, wherein said user interface displays only threads associated with the client connection (c12: 36-54, "...debugger manager user interface...display the debugging session..." where the debugging session is a thread.).

As per claim 10, the rejection of claim 1 is incorporated,

Al-Azzawe discloses

Art Unit: 2191

wherein the server detects an addition of a dynamic T-SQL frame to a user stack within the server and calls a method to pass text of the dynamic T-SQL frame to the debugger (c8:30-46, "debugging of stored...the stored procedure..").

Regarding claims 11-13

Al-Azzawe teaches,

receiving a first call for a stored procedure from the debugger process (column 3, lines 3-7,

"provide call stacking...);

returning an interface pointer to the debugger process responsive to the received first call

(column 3, lines 3-7, "provide call stacking...);

receiving a second call for a register^{meth'd} from the debugger process, where_{in} the second call

comprises a machine name, a process ID and an interface pointer (column 9, lines 25-41, "the client application...the client 110);

recognizing a client connection matching the machine name, process ID and interface pointer on

the server process (column 9, lines 43-53, "the debugger routers...debugging operation);

halting execution of the client connection on the server process responsive to detection (column 9, lines 7-17, "the PSM debugger interface calls...);

executing a third call, wherein the third call establishes operative communications between the debugger process and the client process (column 10, lines 39-57, "the debugger router uses...running); and

debugging the client process (column 11, lines 28-42, "debugger regardless.., debugging).

Al-Azzawe does not specifically disclose

Debugger is on a separate machine from the application (client and server, where client and server are separated as previously shown).

However, Meier et al. disclose

Art Unit: 2191

Debugger is on a separate machine from the application (and therefore, client, server and debugger are separated) (c4: 19-25, "...initiating debugging in an distributed environment where the debugger may be running on a different machine...different from the application program is running on...", and Fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Meier et al. into the teachings of Al-Azzawe to include the limitation discloses by Meier et al. . The modification would be obvious to one of ordinary skill in the art to want to be able to debug external programs as suggested by Meier et al. (c3: 44-47, "...there is no practical method for debugging external program...").

Al-Azzawe/ Meier et al. do not specifically disclose debugging managed code.

However, Alpern discloses

debugging managed code (FIG. 1 shows a debugger capable of debugging virtual machine. The debugged virtual machine can be a JVM, see c8: 49-65, "...JVM...include JAVA classfiles of JAVA bytecode..." SUN's JVM runs bytecode, which is equivalent to Microsoft's CLI. See Specification, page 2, 1st para., where managed code is defined as code running in CLI.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Alpern into the teachings of Al-Azzawe/ Meier et al. to include the limitation discloses by Alpern. The modification would be obvious to

Art Unit: 2191

one of ordinary skill in the art to want to debug managed code on a virtual machine (see Alpern, cl: 41- 44, "The advantage of virtual machine...").

Regarding claims 16

Rejection of claim 11 is incorporated and further claim recites limitations as in claim 6, therefore, claim 16 is _rejected under same rationale.

Regarding claims 17

Al-Azzawe teaches,

server process is executing managed code on the client connection and the debugger process is debugging the managed code, and further comprising displaying, on a user interface, Only threads associated with the managed code being debugged (figures 1-2, column 5, lines 12-29, "two server 102 site..., communication lines).

Regarding claims 18

Rejection of claim 11 is incorporated and further claim recites limitations as in claim 10, therefore, claim 18 is rejected under same rationale.

Regarding claims 19

Rejection of claim 11 is incorporated and further claim recites limitations as in claim 11, therefore, claim 19 is rejected under same rationale.

Regarding claims 20

Rejection of claim 20 is incorporated and further claim recites limitations as in claim 12, therefore, claim 20 is rejected under same rationale.

Art Unit: 2191

Regarding claims 21

Rejection of claim 19 is incorporated and further claim recites limitations as in claim 13, therefore, claim 21 is rejected under same rationale.

Regarding claims 24

Rejection of claim 19 is incorporated and further claim recites limitations as in claim 6, therefore, claim 24 is rejected under same rationale.

Regarding claims 25

Rejection of claim 19 is incorporated and further claim recites limitations as in claim 17, therefore, claim 25 is rejected under same rationale.

Regarding claims 26

Rejection of claim 19 is incorporated and further claim recites limitations as in claim 10, therefore, claim 26 is rejected under same rationale.

Regarding claims 27

Rejection of claim 11 is incorporated and further claim recites limitations as in claim 27, therefore, claim 27 is rejected under same rationale.

Regarding claims 28

Rejection of claim 27 is incorporated and further claim recites limitations as in claim 7, therefore, claim 28 is rejected under same rationale.

Regarding claim 29

Rejection of claim 27 is incorporated and further claim recites limitations as in claim 1, therefore, claim 29 is rejected under same rationale.

Art Unit: 2191

Regarding claim 30

Al-Azzawe teaches,

detecting a security context of the client connection and performing connecting step only if the security context matches a predetermined security context (column 11, lines 1-10).

Regarding claims 31

Al-Azzawe teaches,

calling step is by way of a distributed component object model (DCOM) (column 10, lines 60-67, "debugging Java and C, C++...).

Regarding claim 32

Rejection of claim 11 is incorporated and further claim recites limitations as in claim 11, therefore, claim 32 is rejected under same rationale.

Regarding claim 33

Rejection of claim 32 is incorporated and further claim recites limitations as in claim 9, therefore, claim 33 is rejected under same rationale.

Response to Arguments

In the remark,

Applicant argues:

1) Claims 19-26 and 32-33 are statutory.

Examiner's response:

Art Unit: 2191

1) Applicant argued "Applicant amended claims 19-26, and 32-32(33?) to recite "computer-readable storage medium". However, upon reviewing the amended claims, it appears no "computer-readable storage medium" has been recited. The real issue here is the Applicant's specification expressively defines computer readable medium can be signal. It is for this reason, the examiner maintains the rejections.

Applicant's other arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Wang whose telephone number is 571-272-5934. The examiner can normally be reached on Mon - Fri 8:00 - 4:00PM. Any inquiry of general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2191

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Wei Zhen/

Supervisory Patent Examiner, Art Unit 2191